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The cover photograph shows United Nations soldiers cutting up guns using an oxy-acetylene torch. The guns are being surrendered by Nicaraguan resistance forces as part of the peace process in Central America. See story, page 9.
(UN photo 15789 /Steen Johansen)

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The Fourth Non-Proliferation Treaty Review Conference: a Primer

Between 20 August and 14 September, the States parties to the Treaty on the Non-Proliferation of Nuclear Weapons will gather at the Palais des Nations in Geneva to review the operation of the Treaty, as they have done every five years since it came into force in 1970.

The 4th NPT Review Conference takes on special meaning, as in 1995 a conference will be convened to "decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods."

As a pillar of the international non-proliferation régime and the most widely adhered to Treaty in the history of efforts to regulate arms, many regard the Treaty as vital and therefore hope that the Treaty will in fact be extended in 1995. The upcoming Review Conference may play an important part in setting the course for the important decision awaiting the vast majority of the members of the international community in 1995.

"The United States and the Soviet Union have now gone a long way in upholding their side of the bargain as stated in Article VI...given the reductions in START and the goal of further reductions in follow-on negotiations, there can be no more excuses from any country for not endorsing the Non-Proliferation Treaty..."

Amb. Richard Burt
USA

The need to prevent the spread of nuclear weapons has been of concern to governments and to the public as well. Thus, a number of non-governmental organizations have taken a keen interest in the NPT and will closely follow its Review Conference – indeed, many will attend and be able to observe open meetings in accordance with the rules of procedure.

The NPT :

The Treaty on the Non-Proliferation of Nuclear Weapons was negotiated in the Eighteen-Nation Disarmament Committee – a precursor to today's forty-member Conference on Disarmament. It was signed in 1968 and entered into force in March 1970. Its three Depositary States are the Soviet Union, the United Kingdom and the United States. There are currently 141 parties to the NPT.

The main purposes and provisions of the NPT can be summed up as follows:

1. The prevention of the proliferation of nuclear weapons or other nuclear explosive devices;
2. Safeguards to ensure that the peaceful nuclear activities of non-nuclear-weapon States are not diverted to producing nuclear weapons or other nuclear explosive devices;
3. Promotion of the peaceful uses of nuclear energy;
4. Promotion of nuclear disarmament;
5. Maintenance of the right to establish nuclear-weapon-free zones.

US President Lyndon B. Johnson announcing the 1968 signing in Moscow of the Treaty on the Non-Proliferation of Nuclear Weapons and the beginning of talks with the Soviet Union on limitation and reduction of nuclear weapons. (Photo credit: UPI/Bettmann)

The Treaty defines the obligations of both nuclear-weapon and non-nuclear weapon States parties regarding the prevention of the further spread of nuclear weapons. The nuclear-weapon States commit themselves not to assist, induce or encourage any non-nuclear-weapon State to acquire or manufacture such weapons, ortransfer any such devices or control of them to any recipient whatsoever; non-nuclear weapon States commit themselves not to manufacture or otherwise acquire or control nuclear weapons or other nuclear explosive devices.

In order to ensure that nuclear energy is not diverted from peaceful uses to nuclear weapons or other nuclear explosive devices, non-nuclear-weapon States also undertake to enter into safeguards agreements with the International Atomic Energy Agency.

The parties also commit themselves to facilitate and have the right to participate in the exchange of technological information for peaceful applications of nuclear energy.

In the preamble section of the Treaty, the parties reaffirm their determination expressed in the partial test-ban Treaty to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time, and in the main section of the Treaty, the parties, including the three nuclear-weapon States party to it – the Soviet Union, the United Kingdom and the United States – agree to pursue negotiations in good faith on cessation of the nuclear arms race and nuclear disarmament and general and complete disarmament.

The final articles deal with matters such as amendments to the Treaty, entry into force and rights of withdrawal, and provide for the Review Conferences as well as for the 25-year initial term in force and the holding of a conference to consider is to continue indefintely or to be renewed or extended.

"For the credibility of the NPT régime, [the nuclear- weapon States] should fulfill their obligations by agreeing to negotiate a Comprehensive Nuclear Test Ban treaty which is absolutely essential for the preservation of the non-proliferation régime embodied in the NPT."

Final Declaration of the 9th Summit Meeting of the Movement of Non-Aligned States.

"The non-proliferation of nuclear weapons is an important area of nuclear disarmament in which multilateral efforts are required. Here, each State can add its strong voice in favour of nuclear-weapon-free security and prevention of destabilization of international relations which can result from nuclear weapon proliferation. The (NPT) has been effectively in force for more than 20 years. The maintenance and strengthening of this key document, its universalization,are prerequisites of a steady, continuous and expanding process of nuclear disarmament."

Vladimir Petrovsky
USSR Deputy Foreign Minister

READEX FICHE

"The Treaty has played a vital role in the history of recent decades in helping to contain the spread of nuclear weapons while at the same time encouraging the peaceful uses of nuclear energy. It will be just as essential in the decades to come."

Amb. Tessa Solesby
United Kingdom

States Parties:

While over 140 States have adhered to the Treaty, several important ones have not, including two of the five nuclear-weapon States, China and France (both these States have indicated that they will, for the first time, attend the Conference as observers, as will a number of other non-parties). A number of other States which are not parties have extensive nuclear programmes covering the whole fuel cycle, includir.g Argentina, Brazil, India, Israel, Pakistan, and South Africa.

The following States have be come parties since 1985:

- Kuwait and Qatar (1989)
- Bahrain and Saudi Arabia (1988)
- Spain (1987)
- Trinidad and Tobago, Yemen, Colombia and Malawi (1986)
- People's Democratic Republic of Korea and Seychelles (1985)

The purpose of the Review Conference:

According to the Treaty's article VIII, paragraph 3, the purpose of the Review Conferences is "to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realised."

At the first Review Conference, held in 1975, a difference of interpretation emerged as to the Conference's objective: the nuclear-weapon States, generally supported by their allies, felt that the principal objective was to strengthen the Treaty by encouraging wider adherence to it and by making more effective the safeguards system to prevent the diversion of nuclear energy from peaceful to military applications. The neutral and non-aligned States held that the main objective was to make a thorough, critical examination of the Treaty's operation in order to determine whether all its provisions were being realized and to adopt measures to fill gaps and remedy inadequacies that might emerge from such an examination.

At past Review Conferences a central issue has been the commitment to pursue negotiations in good faith on effective measures to halt the nuclear arms race at an early date and to proceed to nuclear disarmament.

Many non-nuclear-weapon States have been critical; they declare that, whereas they have kept their part of the bargain, the absence of significant progress in nuclear disarmament, particularly in the area of a comprehensive test ban, continues to be an insufficient response by the nuclear-weapon States to their NPT obligations.

Other difficult questions have concerned access to nuclear technology and materials for peaceful purposes, whether the safeguard requirements imposed on non-nuclear-weapon parties put them at a disadvantage as compared to States that have not joined the Treaty, and the demand by many States that have renounced the nuclear-weapons option by joining the Treaty that the nuclear-weapon parties formally guarantee not to use nuclear weapons against them.

Organization of the Review Conference:

The Conference will begin with procedural matters such as elections of the President and Vice-Presidents and confirmation of the Secretary-General, adoption of agenda, rules of procedure, cost arrangements etc.There will then be a general debate at which States parties, a number to be represented at the Foreign Minister level, will present their views. The work will then be divided into three main committees, each assigned to review the operation of various articles and preambular paragraphs.

"There is perhaps something paradoxical about nuclear-weapon States desperately urging non-nuclear-weapon States not to do what they, themselves, seem to find indispensable to continue doing, namely develop nuclear weapons."

Hans Blix, (Sweden)
Director General,
IAEA.

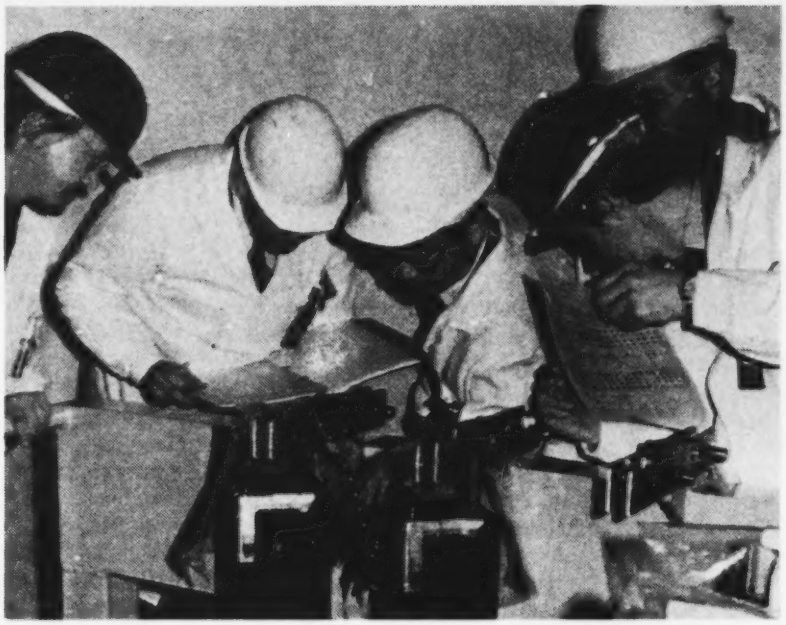
Information for NGOs:

Non-governmental organizations may attend Plenary and Main Committee meetings and are entitled to receive documents of the Conference upon request. NGOs will be permitted to display documentation outside the Conference rooms.

Throughout the Conference, United Nations officials and delegates will brief NGOs on its progress. Enquiries either in New York or Geneva should be addressed to: Ms. Florence Lee or Ms. Lucy Webster of the UN Department for Disarmament Affairs, who will act as liaison officers for NGOs. Provisions will also be made for use of a room, as well as limited photocopying, telephone and typing facilities. □

"Non-proliferation of nuclear weapons has to be from now onwards a broader political doctrine, a moral attitude, a basic element for common security ... the policy of nuclear non-proliferation does not have to be restricted or limited strictly to a mathematical 'quid pro quo' formula for nuclear disarmament ... States have to remain or become non-nuclear because they feel secure that way."

Oswaldo de Rivero, (Peru)
President Designate, 4th
NPT Review Conference



International Atomic Energy Agency inspectors are the most visible component of the IAEA safeguards systems. Under agreed rights of access, they regularly visit nuclear installations to verify records, check instruments and surveillance equipment, and confirm physical inventories of nuclear materials. IAEA inspectors performed nearly 2,200 inspections in 1989.

IAEA safeguards

An essential component of the nuclear non-proliferation régime is the International Atomic Energy Agency, an independent intergovernmental organization within the United Nations system. Established in 1957 and headquartered in Vienna, its main objective is to accelerate and enlarge the contribution of atomic energy to peace. A vital part of its activities is operating an international safeguards system.

This system consists of agreements betweeen the IAEA and individual States, and aims at ensuring that nuclear materials for peaceful purposes are not diverted to military purposes, and at deterring such diversion by risk of early detection. The system combines techniques of keeping records and accounts of nuclear materials; periodic reporting; physical protection of nuclear materials and measures of surveillance.

The safeguards system deals only with peaceful nuclear activities, and is not designed as a machinery for verification of nuclear arms reductions. Nor is it intended to serve a policing function; it confers no enforcement role on the IAEA. Its operation as a barrier against nuclear proliferation is based mainly on its ability to detect diversion by the continued presence of an outside, impartial, professional inspection mechanism. The system also offers States a way of building confidence, both among neighbouring and other States as well as their own citizens, that they are using nuclear technology and materials exclusively for peaceful purposes.

The first IAEA safeguards agreement was signed in relation to a small Japanese research reactor in 1960. Today, over 900 nuclear installations are under safeguards in 102 States.

The vast majority of these are parties to the nuclear non-proliferation Treaty. In addition, the IAEA has safeguards agreements with 12 other States, aiming mainly at assuring their suppliers that the nuclear

materials and technology supplied by them are used only for peaceful purposes. In the case of NPT States, the safeguards are linked to fissionable material, while in other States the safeguards cover both installations and materials if supplied externally; domestically manufactured materials and equipment are not usually safeguarded.

Arrangements with the IAEA have also been made under the Treaty of Tlatelolco, which establishes a nuclear-weapon-free zone in Latin America and the Caribbean, and under the Treaty of Rarotonga, which establishes the South Pacific as a nuclear-weapon-free zone.

The safeguards arrangements provide the Agency with rights of access for inspection of States' nuclear facilities. An initial inspection is performed to verify that design, operation and accounting information provided by the States are accurate. Thereafter, regular inspections follow in which Agency inspectors check instruments and seals for possible tampering, and verify that operating and accounting records provided to the Agency by State authorities are correct and complete.

These inspections are supported by Agency specialists, who analyse the quality and trends of data that is collected from a variety of sources and who then evaluate the effectiveness of the safeguards activities. These evaluations begin with an identification of "diversion strategies" – ways in which nuclear materials could theoretically be diverted from peaceful uses. This information is the basic input in the development of safeguards procedures required for each facility.

The Agency establishes a set of "inspection goals" to enable it to adequately prepare and evaluate inspections. These include the specifying of "significant quantities" – units of measure of nuclear materials considered sufficient for the fabrication of a nuclear weapon; "detection times" – the time interval required to complete the necessary inspection; and "detection probabilities" – the confidence with which conclusions can be reached about the results of inspections and other activities.

On the basis of these criteria, inspectors are able to assess whether accountancy records are correct within one "significant quantity," while the "detection times" help to determine the frequency with which seals should be verified or replaced, the frequency of physical inventory verifications, as well as the intervals within which surveillance equipment should be checked.

The information collected by the Agency and its evaluation is submitted in the IAEA's annual Safeguards Implementation Report (SIR) to its Board of Governors. At its most recent session, the Board took note of the 1989 SIR, which recorded that, as in previous years, the IAEA "did not detect any event which would indicate the diversion of a significant amount of safeguarded nuclear material – or the misuse of facilities, equipment or non-nuclear materials subject to safeguards – for the manufacture of any nuclear weapon, or for any other military purpose, or for the manufacture of any other nuclear explosive device, or for purposes unknown." The report also stated that all States having significant nuclear activities have agreed to accept at least some safeguards. □

Consensus marks UNDC session

The United Nations Disarmament Commission concluded its 1990 session with results that contrasted with those of recent years. Whereas in 1989 the UNDC was unable to reach agreement on any of its agenda items, this year's session reached consensus on all but one of the items it intended to complete.

Several circumstances combined to make the session productive, including the overall improvement in international relations. A second factor was the adoption of a set of reform guidelines "to enhance the functioning" of the UNDC, as recommended by the General Assembly in December 1989 – reforms initiated due to several years of decreasingly productive sessions. In particular, the agreement that items under consideration for more than three years would be excluded from future sessions hung a "Damocles' Sword" over the Commission to conclude all of its old items lest they be excluded from the 1991 session.

These reforms were prompted by a recent inability to reach the consensus by which recommendations are made. This had, for many, put into question the UNDC's "raison d'être." Consequently, a set of "Ways and Means to Enhance the Functioning" of the UNDC was approved by the General Assembly last December and subsequently adopted by the Commission.

The only new item that will be carried over to next year is **"Objective Information on Military Matters."** The Commission did not attempt to conclude its work on this issue, but focused on trying to identify topics of interest to the various delegations.

The item on **nuclear disarmament and "other priority measures"** was the only item on which consensus could not be reached. Little progress was made in removing brackets (indicating absence of agreement) from paragraphs on key issues in the text of thirty recommendations. Wide divergences remained on such questions as the role of the Conference on Disarmament; a time-bound comprehensive programme of disarmament; a comprehensive test ban; prevention of nuclear war; a nuclear arms freeze; a fissile material cut-off; non-first-use of nuclear weapons; prevention of an arms race in outer space; negative security assurances; nuclear-weapon-free zones and defensive defense.

With respect to **South Africa's Nuclear Capability,** the consensus which had eluded the Commission since the item was first considered in 1979 was finally reached. The Commission reiterated the numerous calls of the General Assembly and the Security Council not to assist South Africa in the development of a nuclear-weapons programme, and urged that State's accession to the non-proliferation Treaty and the placing of its nuclear facilities under international safeguards.

On **"the Role of the United Nations in the Field of Disarmament,"** it was recommended that the UN's effectiveness in this area "should be strengthened" and the work of its bodies improved. The interrelationships between disarmament and other issues, such as development, respect for national independence and self-determination, were recognised.

Amb. Nana Sutresna of Indonesia, chairing the 1990 session of the UNDC, with UN Under-Secretary-General for Disarmament Affairs Yasushi Akashi to his right and the UNDC Secretary, Mr.K.C. Lin, to his left. (UN photo)

The text dealing with **Naval Armaments and Disarmament** submitted by the chairman of the Working Group dealing with that issue was annexed to the Chairman's report with the agreement of all delegations (in previous years, the United States had opposed its inclusion). The document was more a summary of views than a set of recommendations, owing to divergences on this topic. The United States continued its practice of not participating in the naval armaments and disarmament working group.

On **Conventional Disarmament**, the Commission noted the progress being made in this area in Europe and Central America, while warning of the continuing "accumulation and sophistication of conventional arms." In response to recent fears that arms being pulled out of Europe might be "dumped" onto third world markets, the Commission agreed that "weapons and equipment which are the subject of conventional force reductions agreements should not be transferred, directly or indirectly, to States not party to the agreement in question." "The principal method of dealing with such weapons," the Commission urged, "should be destruction." The issue of arms transfers was also addressed, with the Commission's calling for "restraint and greater openness."

The Commission also decided to recommend to the General Assembly to adopt an agreed **Draft Declaration of the 1990s as the Third Disarmament Decade**. All areas of disarmament, including many that remain controversial, were listed as objectives to be pursued. The importance of an informed public was also stressed, recognizing the "invaluable role" of non-governmental organizations and supporting "an enhanced role for women in developing the conditions for enduring peace."

The UNDC was first established in 1952. It did not meet from 1965 to 1978 when it was reestablished by the UN First Special Session on Disarmament. Its reconstituted form, which has met in four-week sessions since 1979 (usually in May-June), was established as a deliberative body and a subsidiary organ of the General Assembly. Open to all UN Member States, its function is to consider and make recommendations on various problems in the field of disarmament when the General Assembly is not in session. □

Successful outcome at PTBT Amendment Conference organizational Meeting

Delegates meeting at United Nations Headquarters successfully concluded their Meeting for the organization of the Partial Test-Ban Treaty Amendment Conference.

The Meeting, held from 29 May to 8 June, was the first ever formal gathering of the parties to the 1963 partial test-ban Treaty. Its task was to elaborate the modalities for the January 1991 PTBT Amendment Conference, where a proposal to convert that Treaty into a comprehensive test ban will be considered.

"No other item on the disarmament agenda has attracted so much attention and persistent efforts as the achievement of a comprehensive test ban. It has been the object of more General Assembly resolutions than any other item on nuclear disarmament since its inclusion in the agenda over 35 years ago."

Yasushi Akashi, Under-Secretary-General for Disarmament Affairs, United Nations

That proposal was advanced in August of 1988 by Indonesia, Mexico, Sri Lanka, Venezuela and Yugoslavia, and later formally supported by another 35 States. Under the PTBT's Article II, any such amendment proposal will be considered at a conference convened by the Treaty's three Depositary States – the Soviet Union, the United Kingdom and the United States – if so requested by at least one-third of the parties.

74 of the 118 States parties participated in the Meeting, of which 28 made statements in the general exchange of views. While the Meeting was primarily organizational, a number of delegations, mostly non-aligned, used their opening statements to voice their support for a comprehensive test ban.

The Meeting was successful in its main task of elaborating the rules of procedure and agenda for the Conference, as well as agreeing on background documentation that is to be prepared in advance. All decisions were made by consensus.

Prior to the Meeting, consultations had proceeded for several months on a number of issues. The question of the financing of the two sessions, estimated at about US$ 1 million, was finally reached on the opening day of the Meeting.

The United States, which has declared that it opposes the proposed amendment and that it therefore does not find the amendment conference useful,originally proposed that all parties pay an equal share. The non-aligned States, in particular, felt that the Conference should be paid for according to a scale of assessments similar to that of the UN regular budget, and noted that this had been the practice for other non-UN conferences, such as the non-proliferation Treaty Review Conferences. In the end, agreement was reached that the three original parties would share one-third of the costs, while the remaining States parties would pay according to their UN assessment, and the resulting shortfall would be assumed by voluntary contributions.

The issue of "decision-making" was resolved with an agreement to "exhaust all efforts" to achieve consensus before proceeding to a vote. This would not apply to the consideration of the proposed amendment itself, since the Treaty specifies that an amendment, in order to be adopted, must be approved by a majority of the States Parties, including the concurring votes of the three depositaries.

Ambassador Edmond Jayasinghe of Sri Lanka, President of the PTBT Amendment Conference organizational Meeting, conferring with Amb. Miguel Marin Bosch of Mexico and Mary Elizabeth Hoinkes, head of the US delegation to the PTBT Meeting. (UN photo)

A UN peace-keeper from Venezuela standing guard at a camp where Nicaraguan resistance forces surrendered their weapons to the United Nations Observer Group in Central America. (UN photo 157600 /Steen Johansen).

"Those who oppose a comprehensive nuclear test ban should very well remember that since scientific and technological knowledge knows no boundaries, continued proliferation of nuclear weapons without the solid barrier of a CTBT is not only a threat to the security of neighbouring States within that region but to the established nuclear Powers themselves in the long run as well..."

Amb. E.A. Azikiwe
Nigeria

An understanding was also reached that NGOs would be invited to present their views to the Conference participants during an informal session.

On the issue of background documentation, the six original sponsors of the Amendment Conference had proposed a list of 11 documents to be prepared. It was decided to commission only one background document covering a list of topics including most of the subjects proposed by the six.

The Meeting also decided to invite the parties to the Treaty, in particular the nuclear-weapon States, to submit their views regarding the verification of a CTB. □

"It is my conviction that this is a historic occasion not only for the States parties...but also for the international community as a whole. Many around the world consider this Meeting to be among the most important gatherings in the field of arms limitation and disarmament that will take place this decade."

Amb. Edmond Jayasinghe,
Sri Lanka

Disarmament in Nicaragua under UN auspices

The decade-old civil war in Nicaragua now appears to have finally come to an end, with the disarmament under UN auspices of nearly 19,000 members of the Nicaraguan resistance, commonly known as the "contras."

A United Nations peace-keeping force, the United Nations Observer Group in Central America (ONUCA), guided and supervised the process, as members of the Nicaraguan resistance entered defined "security zones" and handed over their weapons to UN "blue helmets," who then destroyed the weapons with acetylene torches.

ONUCA was initially established to verify compliance with an agreement signed by the five Central American Presidents to cease aid to irregular forces and insurrectionist movements in the region and not to allow their territory to be used for attacks on other States. Its mandate was subsequently expanded to include verification of the demobilization of the irregular forces in Nicaragua.

Observers noted that the United Nations also had a role in creating the political conditions necessary for the demobilization: aside from the Secretary-General's active efforts in the regional peace process, the UN also provided a civilian mission that monitored and verified the recent electoral process in Nicaragua, helping to ensure that the elections were free and fair. This in turn gave widespread legitimacy to the results.

As part of the demobilization agreement, regular forces in Nicaragua are also to be reduced substantially. □

START close to finish

After 12 rounds of negotiations over 8 years, 13 meetings of foreign ministers and 6 summits, the US and Soviet Presidents reached an agreement in principle to sign a START (Strategic Arms Reductions Talks) treaty. Most of the political issues holding up the treaty were resolved in the course of the June Washington summit meeting, and both sides committed themselves to signing a treaty in Moscow before the end of the year.

"We may not agree on everything, but we agree on one great truth: The world has waited long enough; the Cold War must end."

US President
George Bush

The treaty is to be the first to bring about actual reductions in the numbers of strategic weapons – by as much as 50% in some categories.

More important than the reductions the treaty will entail, according to the Joint Statement issued by the two Presidents, is the fact that "these reductions will be designed to make a first strike less plausible." The result, the statement read, "will be greater stability and a lower risk of war."

According to negotiators, only three "political" or substantive issues remain to be resolved. The United States views a certain class of Soviet bomber (often referred to in NATO countries as the Backfire) as a strategic weapon capable of reaching targets in the United States and should therefore be constrained under START.

The other US concern is the Soviet SS-18 missile which carries up to ten warheads and is considered sufficiently accurate to destroy hardened US missile silos. Although START generally would not inhibit either side from modernizing its weapons, so long as the numbers in each category remain the same, the US has sought additional limits to the flight testing of any new version of the SS-18.

For the Soviet Union's part, it is concerned that the US might circumvent the limits on sea-launched ballistic missiles by selling these weapons to the United Kingdom.

The main obstacle overcome during the summit was on sea-launched cruise missiles (SLCMs) – a pilotless jet armed with a warhead launched from submarines or surface ships. The Soviet Union had originally proposed that these weapons be constrained by the START agreement.

In the end, it was agreed that limits would be set not by the treaty but through "unilateral, politically binding statements." Both sides agreed to a limit of 880 SLCMs each, a compromise between the 760 the USSR proposed and 1,000 put forward by the United States. The United States currently only plans to deploy 756 such weapons, while the Soviets have yet to deploy any. Thus, unlike the START agreement itself which reduces weapons, the SLCM deal sets upper limits beyond planned deployment levels.

The agreement in principle between General Secretary Gorbachev and President Reagan at their Reykjavik summit meeting in 1986 aimed at a 50% reduction of their strategic weapons. Now, although the START agreement that the parties have decided to conclude before the year's end does reduce certain categories of weapons by 50%, negotiators speak of an overall 30% reduction. Some analysts have estimated that the reductions will be even smaller.

Such statistics vary depending on what one is counting – warheads, or their means of delivery (missiles and bombers).

The lower figures take into account certain "discounting rules" that apply to strategic bombers: due to difficulties in verification, it was agreed that US bombers – capable of carrying up to 20 air-launched cruise missiles – would be counted as 10 warheads, and Soviet bombers which can be fitted with up to twelve ALCMs would count as eight. Irrespective of the number of gravity bombs and short-range missiles a bomber of either country carries, it would be counted as only one warhead.

"[This] represents an event of momentous importance not only for our two countries but for the world."

Soviet President
Mikhail Gorbachev

While some felt that this would mean that the agreement would not go far enough, there were others in both the United States and the Soviet Union who felt that their respective negotiators had been too keen to reach agreement and thereby compromised their interests.

In the United States, there were some who felt that the Administration had made too many concessions in allowing some modernization of the Soviet SS-18. Parallel misgivings were expressed in the Soviet Union by those who felt that their negotiators ought to have insisted on formal (Continued on page 12)

The US MX missile shown here is an intercontinental ballistic missile (ICBM) which can carry up to 10 nuclear warheads. (Photo published in NATO Review, August 1989).

START highlights

Ballistic Missiles:

- ICBMs and launchers reduced to no more than 1600 each; heavy ICBMs (Soviet SS-18s) must be reduced to no more than 154 within this limit;
- Warheads attributed to ICBMs, SLBMs and heavy bombers will be reduced to no more than a total of 6000 each, with the following sublimits: ICBMs and SLBMs – no more than 4900; heavy ICBMs – no more than 1540; mobile ICBMs – no more than 1100;

Heavy bombers:

- Heavy bombers not equipped with Air-Launched Cruise Missiles (ALCMs) counted as one delivery vehicle within the 1600 limit and one warhead, regardless of number of bombs with which it is equipped, against the 6000 warhead limit;
- Heavy bombers equipped for long-range (600 km and above) nuclear ALCMs to be counted as 1 delivery vehicle against the 1600 limit. Up to 150 US bombers so equipped, capable of carrying as many as 20 ALCMs each, will be counted as 10 warheads per bomber; up to 210 Soviet bombers so equipped, carrying up to 12 ALCMs, will count as 8 warheads each. Beyond the 150 and 210 respective limits, bombers will be attributed as having the actual number of ALCMs with which they are equipped;

Throw-weight:

- Aggregate throw-weight of ICBMs and SLBMs: reduced to 50% below the current USSR level;

Time-table:

- Reductions to be carried out in three phases over a period of seven years;

Modernization:

- Modernization and replacement of strategic offensive arms may be carried out, with exceptions for certain heavy ICBMs and SLBMs and launchers and MIRVed ALCMs;

Verification:

- "Most thorough and innovative verification provisions ever negotiated," including on-site inspections, continuous monitoring of production facilities for mobile ICBMs, inspections to verify numbers of warheads and elimination of strategic arms, suspect sites verification; as well as national technical means (satellite monitoring etc.); information exchanges on numbers, locations and characteristics of arms; and a ban on denial of telemetric information;

Dispute mechanism:

- Establishment of a "Joint Compliance and Inspection Commission" to discuss implementation and resolve disputes;

Duration:

- Duration of Treaty to be 15 years, unless superseded by another agreement. May be extended for additional five-year periods by mutual consent;

SLCM agreement:

- Sea-launched cruise missiles (SLCMs) not constrained by Treaty. Unilateral, politically binding declarations to be made by both sides not to exceed 880 such missiles and not to produce or deploy any such missiles with multiple independently targetable warheads. Both sides to continue to seek "mutually acceptable and effective methods of verification."

(continued from page 11)
limitations of SLCMs, where the United States has a significant numerical and technological edge.

Defenders of START argue that the real test of a treaty's effectiveness is whether or not it reduces the threat of nuclear war; the treaty's importance will not lie in the numerical reductions it will impose, but in the restructuring of nuclear forces it will entail.

Heavy land-based missiles capable of carrying multiple warheads are subject to the deepest reductions – both in numbers and in "throw-weight," or total explosive force.

These weapons are often viewed as dangerous because they are seen as providing an incentive to strike first in a crisis; carrying several highly accurate warheads, a single missile has the potential to destroy many of the other side's missiles; and because they are immobile in their silos they present a tempting target. This creates a scenario in which it is strategically advantageous to be the first to launch one's weapons, while waiting runs the risk of losing one's weapons before they are launched.

According to this view, major cuts in fixed land-based missiles will lead to increased reliance upon weapons regarded as more "stabilizing", such as mobile land-based ballistic missiles, which are less vulnerable to a first-strike attack; cruise missiles, which are viewed as too slow to be used in a first-strike attack because the other side would have time to detect the attack and respond; and bombers, which can be recalled after attack orders have been given. □

"Trailblazing" Soviet-US agreement on chemical weapons

Presidents Bush and Gorbachev, at their June Washington summit meeting, signed a bilateral "Agreement on Destruction and Non-Production of Chemical Weapons and on Measures to Facilitate the Multilateral Convention Banning Chemical Weapons."

"[The Agreement will] provide a real pathway toward a global ban on horrific weapons that we already know from bitter experience actually get used."

US Secretary of State James Baker

The Agreement calls for the destruction of the vast bulk of the US and Soviet chemical weapons (CW) stockpiles and for the cessation of further production of such weapons. US Secretary of State James Baker described it as a "trailblazing agreement" that would "provide a real pathway toward a global ban on horrific weapons that we already know from bitter experience actually get used."

This was a reference to the Chemical Weapons Convention currently under negotiation in the Geneva Conference on Disarmament.

Under the bilateral Agreement, both sides would reduce their declared stocks by 50% by 1999, and subsequently diminish their stocks to a 5,000 ton ceiling by the year 2002.

The signing of the Agreement comes almost one year after President Bush made a proposal before the UN General Assembly by which the United States and the Soviet Union, to stimulate progress towards a global ban, would reduce their chemical weapons stocks by 80% immediately and proceed to a 98% cut over eight years. The US Administration had been mandated by Congress to eliminate 90% of its stocks by 1997.

In his address, the US President said that the United States would retain 2% of its stockpiles even after the global Convention had come into force until all "chemi-

CW agreement highlights

- destruction of CWs to begin in 1992;
- declared stocks reduced by at least 50% by end 1999;
- cut to 5,000 agent tons by 2002;
- immediate halt of production;
- on-site inspections during and after destruction process;
- annual data exchanges on stockpile levels;
- co-operation in development and use of safe and environmentally sound methods of destruction;

Relationship to the global Convention:

- reduction to be accelerated down to a level of 500 tons after 8 years after global Convention comes into force;
- proposed conference after 8 years to determine if participation in global ban is sufficient for completion of destruction of remaining 2

cal weapons-capable" countries had signed the global ban. The United States would also continue its production of chemical weapons, which it had resumed in 1987 after a moratorium that had lasted nearly two decades.

The Soviet Union announced in 1987 that it had unilaterally stopped production of its chemical weapons.

Continued production and retention of small stocks was viewed by some as making difficult the task of negotiating the global Convention, which seeks to ban all chemical weapons for all States on an equal basis.

As it happened, United States production of binary chemical weapons had come to a virtual halt in January because the two US manufacturers of the necessary chemical, thionyl chloride, had refused to supply it to the Army on moral grounds.

At the summit, it was agreed that the United States and the Soviet Union would halt their production of CWs upon entry into force of their Agreement, without waiting for the global Convention.

And while the bilateral Agreement provides for a leveling-off at 5,000 tons by the year 2002, both sides agreed that they would accelerate their CW destruction down to 500 agent tons in the eighth year of the projected Convention, should it come into force. At that time, rather than proceed immediately to complete CW destruction, both sides agreed to jointly propose a conference "to determine whether participation in the Convention is sufficient to complete the elimination of chemical weapons stocks over the following two years."

The agreement still faces a major technical obstacle: the current inability on the part of the Soviet Union to actually destroy CWs. The Soviet chemical weapons destruction facility, located south of Moscow on the Volga river at Chapayesk, was shut down and converted into a training site after a public outcry over potential environmental and safety hazards.

Chemical weapons on display at the Soviet military base at Shikany in October 1987 for Western observers participating in exchange visits to US and Soviet CW sites. (Photocredit: TASS from Sovfoto)

Similar protests were raised about the US CW destruction facility, located on Johnston Atoll in the South Pacific, which is expected to become operational shortly. It is to be the first of eight or nine such plants that are projected to be built.

Under their Agreement, the United States and the Soviet Union agreed to co-operate in the development of safe and environmentally sound destruction methods.

The bilateral agreement was welcomed at the opening of the second 1990 session of the Conference on Disarmament, although a number of delegations expressed misgivings about the idea of retaining 2% of stocks.

Negotiations on the global Convention have been under consideration since 1981. Over 70 nations are participating in the discussions, as the 40 Members of the Conference on Disarmament have accepted numerous requests from other States to join in their deliberations on this issue. □

New Publications

The United Nations Disarmament Yearbook, Vol. 14, 1989 (English)
Sales No. E.90.IX.4

Disarmament: A Periodic Review, Vol.XIII, No.3, 1990 (English)

Disarmament: A Periodic Review
Vol. XII, No.1, 1989 (Russian)
Sales No. R.89.IX.3

Disarmament: A Periodic Review, Vol. XII, No.2, 1989 (Russian)
Sales No. R.89.IX.4

Disarmament: A Periodic Review, Vol. XII, No.2, 1989 (Spanish)
Sales No. S.89.IX.4

Disarmament: A Periodic Review, Vol. XII. No.3, 1989 (French)
Sales No. F.89.IX.7

Disarmament Facts 71: Convention on Inhumane Weapons. Free of charge from the UN Department for Disarmament Affairs in all six official languages.

The United Nations General Assembly and Disarmament 1989
Sales No. E.90.IX.5

Confidence- and Security-building Measures in Asia (English). □

70s testing treaties completed

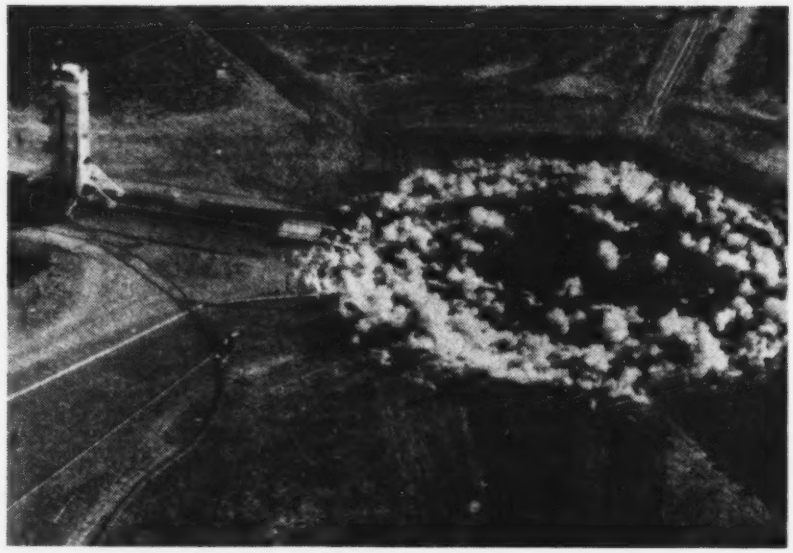
At their recent summit meeting, Presidents Bush and Gorbachev signed verification protocols to the 1974 threshold test ban Treaty (TTBT)and the 1976 peaceful nuclear explosions Treaty (PNET) that are expected to allow for their ratification.

Although neither had been approved by the US Senate and were therefore not ratified, both sides had stated that they intended to observe the provisions of both treaties, which ban nuclear explosions with planned yields, or explosive force, exceeding 150 kilotons (the Hiroshima bomb, by comparison, was roughly equal to 15 kilotons).

The PNET was intended to complement the TTBT by also covering nuclear explosions conducted for peaceful purposes such as excavations and mining.

Although once expected to become widely used, the problems involved in using PNE technology has led to fading interest in it. The United States has not conducted such explosions since 1973 and the number of PNEs carried out in the Soviet Union has decreased over the years. The last Soviet PNE was detonated in 1988 . The Soviet Union has declared that it is willing to give up the PNE option completely if a comprehensive test ban can be negotiated.

In 1977, the United States and the Soviet Union, along with the United Kingdom, sought to complete a comprehensive , or total, test ban which would have rendered both 70s treaties meaningless. Those talks broke down in 1980. The United States has also charged that the Soviet Union has exceeded the 150 kt threshold agreed in the unratified TTBT – allegations the Soviet Union has denied.



An underground nuclear explosive test at the US testing site in Nevada.

Nuclear testing protocols highlights:

- Both treaties to be verified limit nuclear tests to 150 kilotons (150, 000 tons of TNT);
- Verification methods include hydrodynamic measurement (CORRTEX), seismic verification on the territory of the testing party and on-site inspection, as well as national technical means such as satellite surveillance;
- Right to hydrodynamic measurements for explosions above 50 kilotons;
- Right to on-site inspections above 35 kt.;
- Right to local seismic network for group explosions above 150 kt.;

After six rounds of discussions which had begun in 1982, the United States and the Soviet Union announced, in September 1987, the establishment of bilateral Nuclear Testing Talks, which sought agreement on "effective measures of verification which would make it possible to ratify the TTBT and PNET, and proceed to negotiating further limitations leading to the ultimate objective of the complete cessation of nuclear testing as part of an effective disarmament process." This approach was dubbed the "step-by-step" process, and was supported by most States in the two major military blocs but was criticized by neutral and non-aligned States as too timid.

The main disagreement between the United States and the Soviet Union was over which of two different methods of verification to use – seismic sensors placed near the testing site or a method known as "CORRTEX."

CORRTEX, which stands for Continuous Reflectometry for Radius Versus Time Experiment, was described by US officials as "the most practical and accurate system we know to measure yield without revealing sensitive information."

It consists of running an instrumented cable down a shaft parallel to the nuclear device underground and then measuring how quickly it is crushed by the nuclear explosion.

Seismic monitoring measures shock waves produced by an explosion (as for measuring earthquakes) to estimate the explosive yield of a blast. It does not require equipment to be installed on the test sight itself, nor does it require inspectors to be present at the test site, as does CORRTEX.

Under the protocols signed at the summit, both methods could be used, along with on-site inspection.

At the recent Meeting for the Organization of the Partial Test-Ban Treaty Amendment Conference, some delegations praised the agreements as positive steps towards a comprehensive test ban, while others criticized them, saying they would only serve to legitimize continued testing.

Although US officials have stated that they have not identified any further testing limits which would be in their national security interests and that nuclear testing must continue until nuclear deterrence is no longer necessary, both the USA and the USSR have reaffirmed their pledge under their 1987 agreement to proceed to negotiations on further testing limits.

The United States has said that it wishes to observe the implementation and verification of the two treaties after which it will be "better able to assess verification lessons learned, and ... determine the additional moves that make sense from a national security standpoint."

The Soviet Union has reiterated its readiness to begin a bilateral moratorium on testing and to negotiate a comprehensive test ban, bilaterally or multilaterally, both at the Conference on Disarmament and at the partial test-ban Treaty Amendment Conference. □

CFE update

During their seventh round of talks, NATO and Warsaw Treaty Organization negotiators in Vienna reached agreement on tanks and armored combat vehicles (ACVs) in a development that signficantly increased the possibility of reaching a final accord on conventional forces in Europe before the end of the year, as has been the objective.

The agreement, a compromise package proposed by France and Poland to limit each side to 20,000 tanks and 18,000 armored infantry combat vehicles, is central to the Vienna efforts to reduce the size and offensive capability of the two military blocs' conventional armed forces. These types of weapons are viewed as the most useful for surprise attacks or large-scale offensive attacks, capabilities the talks seek to reduce.

The agreed common ceilings will result in asymmetrical reductions, since the Warsaw Treaty Organization has a significant quantitative edge in tanks and ACVs.

Remaining areas of disagreement include limits on aircraft, verification issues and the "sufficiency rule" which would prevent any single country from maintaining weapons above a certain percentage of the total for the area. NATO has proposed that this level be 30%, while the USSR, would, in the present situation, prefer 35%-40%.

The two super-Powers have already agreed to reduce their armed forces in Central Europe to 195,000 each, and that the United States would be permitted an additional 30,000 troops in Europe outside the Central Zone. Limits on Soviet troops outside the Central Zone are not subject to the Vienna negotiations, but the USSR has made a unilateral commitment to reduce its forces in all of Europe, including Soviet territory, by 500,000 men.

At the NATO Summit in London 5-6 July, Chancellor Helmut Kohl of the Federal Republic of Germany undertook to limit the force level of a united Germany at the time of the signing of the CFE agreement. The rapid development towards German unification has changed the original assumptions on which the European force reduction negotiations were premised; the commitment to a German force ceiling intends, *inter alia*, to remove unforeseen uncertainty for the negotiators.

The NATO leaders also pledged to proceed immediately after a CFE agreement with further negotiations to limit forces in other NATO and WTO States in the Central Zone, something the Soviet Union has long sought to include in the discussions.

In a subsequent development, it was announced that, in the talks between the Soviet and German leaders, it had been agreed to set a force ceiling of 370,000 men for a united Germany, or about 55% of the current combined force levels of the two Germanys (667,000). □

CFE Tank and ACV Cuts

	Current NATO	Current WTO	Agreed limits
Tanks	24,000	55,000	20,000
ACVs	30,100	71,300	30,000

Source: Institute for Defense and Disarmament Studies

NGO news items

The brief report below on activities of non-governmental organizations includes some of the events and programmes which have come to the attention of the United Nations Department for Disarmament Affairs. The coverage does not imply any judgement by the United Nations.

The **US Comprehensive Test Ban Coalition** reports that the US Conference of Mayors voted in June to convene a special meeting in New York just prior to the January 1991 Test Ban Treaty Amendment Conference. The mayors voted unanimously to title their conference "The Budget, CTB, and the Cities." **Contact**: US Comprehensive Test Ban Coalition, 1000 16th St. NW, Washington DC 20036, USA. (Tel: 1-202 862-4956)

The **Research Policy Institute** of Lund, Sweden will begin its fourth Graduate Programme on Science and Technology Policy from 1 September 1991, and asks that applications to enroll be submitted before 1 November 1990. The programme leads to a Master's Degree based on 18 months of full-time study. The seven courses given deal with science and technology in society and include the theory and history of the subject, information technology and social change, the military use of technology: social determinants and impacts, and the role science and technology have played in reshaping political institutions in Europe. **Contact**: Research Policy Institute, University of Lund, Box 2017, S-220 02 Lund, Sweden. (Tel: 46-10 76 16)

The **Academy of Sciences of the USSR** has announced its wish to develop co-operation with scientists in the field of peace research whom it invites to contact its new component organization, the Peace Research Institute (PRIM). Academician Petr N. Fedoseev is the Honorary President of the Institute, Prof. Alexander K. Kislov is the Director, and Dr. Yuri V. Andreev is the Academic Secretary. The main work of the Institute is to undertake research on peace and disarmament in collaboration with foreign scientists and research centres. Topics of study at an early stage include comprehensive international security based on new political thinking and the top priority of common human values; political forces involved in the peace making process; and issues of conversion from military to civilian work. **Contact:** PRIM, Profsoyuznaya, 23, Moscow, 117418, USSR. (Tel: 7-095 128 93 89, Cable:Moscow, B-418, PRIM)

An **International Seminar on Peace and Environment in the Mediterranean** will take place in Tripoli from 8-10 September 1990. Topics will include: the effect of armed clashes and regional wars on the environment and development; the impact of the buildup of weapons of mass destruction in the Mediterranean; and regional and international co-operation for environmental protection and peace.The seminar is organized by the Arab Libyan Committee for Solidarity and Peace. **Contact**: Preparatory Committee, International Seminar on Peace and Environment in the Mediterranean, POBox 12205, Tripoli. Libyan Arab Jamahiriya. (Tel: 218-21 34388 or 33274)

Ask for the Earth is an international festival for peace and the environment which will take place at Roundhay Park, Leeds, England on Saturday, 1 September 1990. While celebrating the end of the Cold War and the resulting opportunity to replace conflict with co-operation, it will call for the transfer of resources from armaments to solving problems of poverty, hunger and environmental pollution. Speakers will include representatives of some of the new governments and grassroots groups working for change in Eastern Europe. There will also be poets, street theatre, jugglers and clowns and a huge range of stalls promoting the work of green, development, and peace organizations. At least 25,000 people are expected to attend. **Contact:** Festival Co-ordinator John Brierley, Lower Lumb Farm, Cragg Vale Hebden Bridge, West Yorkshire, HX7 5SH, England. (44-422 883927)

The **City of New Haven** will be host to a General Assembly of Peace Messenger Cities from 17-19 September 1990. The Assembly which is being organized in co-operation with the United Nations, will attend the opening of the United Nations General Assembly on Tuesday 18 September and will meet with UN officials. Mayors and other city leaders are expected to attend from a large proportion of the 65 cities in 38 countries that are recognized as Peace Messenger Cities by the United Nations. **Contact**: Greater New Haven Peace Council, Box 3105, New Haven, CT 06515-0205, USA.(Tel: 1-203 787-8956, Fax:1-203 787-6042)